



Architect's drawing, showing the completed first unit of the Pacific Port Terminal at Berkeley. The small tower at the extreme right background is the campanile of the University of California.

## New American Port for Asia's Commerce

By HARRY H. DUNN

**P**REPARING to furnish adequate facilities for the handling of a large part of the two billion dollars in annual trade which passes between the United States and the ports of other countries on the Pacific Ocean, largely in Asia, one small city in California has made surveys, drawn plans, figured out estimates and obtained permission from the Secretary of War and the chief of engineers of the United States Government for the construction of a port terminal which is to be the largest of its kind in the New World. Comprehended in this new port is a foreign industrial zone, into which will be received the raw products of the countries bordering the Pacific, and where they can be manufactured into whatever products their importers desire, and then exported to any port in the world, without the payment of duty, coming or going. Since 75 per cent of the raw materials imported into the United States in 1920 came through the ports of Washington, Oregon and California, this foreign trade zone—sometimes better known as a "free-port" zone—forms no inconsiderable factor in the new port terminal.

The city is Berkeley, with only 60,000 inhabitants, but the municipality has adopted a rather unusual course in the construction of this much-needed terminal, in that it has gone into partnership with private interests. The city owns part of the land on which the terminal is to be built; the private co-partners with the city own the remainder of the land. All this tract, which fronts directly on the main section of Berkeley, lies just across San Francisco Bay from the Golden Gate, exactly seven miles from deep salt water through that famous passageway, and one mile nearer to the open Pacific than are the wharves of San Francisco's water front. In fact, one of the reasons which led to the first discussion of this port terminal, was the filling up with wharves of all the deep-water front of San Francisco, the only area of solid land around San Francisco Bay which has deep water in front of it. Thus, the new port, which will cost from ten million to fifty million, as the units are constructed from the first one to the present limit of four, according to present estimates on a falling market of material and labor, will, in reality, serve four national purposes:

1. Provide a deep-water port for Pan-Pacific commerce.
2. Relieve all possible future congestion on the San Francisco water front.
3. Give direct connection between deep-water shipping on the Pacific Ocean and all transcontinental railroads.
4. Furnish a foreign industrial zone, the first "free port" on the Pacific side of the continent.

Among other favorable results, this terminal will obviate all future possibility of such a condition arising in San Francisco as recently arose in New York Harbor, when it became necessary to call on the Jersey side of the great Atlantic harbor to furnish space for wharves and port equipment to relieve congestion of shipping in New York itself. For this reason, San Francisco is supporting the new terminal on the east side of the bay, while Oakland, Alameda, Emeryville, San Mateo and all the other towns and cities surrounding the bay appreciate the advantages accruing to them from having a terminal of all the transcontinental lines of railway converging on the east side of that bay. By this use of this terminal, present conditions, whereby the freight trains of all railroads except the Southern Pacific have to be ferried into San Francisco, the cost of handling 6,000,000 tons of freight annually on these ferries will be eliminated. It is estimated that this freight-ferry charge alone will pay for the first unit of the Pacific Port Terminal in about five years.

Each unit of the port terminal will be constructed on the solid quay plan, the quay to be composed of material dredged from the bay, the water here being only eight feet in depth, and to be dredged to a depth of 30 feet. Between each of the units will be a channel, 3,000 feet wide by 30 feet deep at mean low water, so that each unit will offer 35,000 lineal feet of this berthing space. On the solid quay so built up by dredging out this channel, as well as from the main approach channel, 300 feet wide and 30 feet deep, connecting the whole terminal with deep salt water in line with the Golden Gate entrance to the bay, will be 3,000,000 square feet of space for wharf-sheds and warehouses. Back of this wharf-shed and warehouse area, will be 3,500,000 square feet more, on each unit, for other warehouses, some manufacturing industries, cold and long-term storage plants, as well as short-term storage. Still back of this, on the mainland, each unit will have 1,500 acres of land for railroad yards, motor-truck terminals and stations, and manufacturing plants. Multiplying these areas by four, one gets the entire area on the whole terminal of four units, sufficient land to furnish accommodations for the commerce, warehousing, railroad yards and manufactories of San Francisco Bay for the next 25 years, if estimates made by commercial organizations in this section be correct.

Distribution and transportation, two mighty factors in modern co-ordination of sea and land transportation, are well cared for. The transcontinental rail lines run into a classification yard for the entire four units, which yard has a capacity of 2,000 cars, with rail lines running not only to each unit, but to each manufacturing plant, warehouse and wharf-shed and ship side as well. Surrounding each unit runs a railroad for traveling cranes of large size, for handling cargoes direct from ship

### Purposes of the New Port

**T**HE new Pacific Port Terminal, to be constructed jointly by the city of Berkeley, California, and private interests, is designed to furnish terminal facilities for the tremendous and growing commerce of the United States to and from the countries of the Pacific Ocean; to provide a foreign trade zone (Free Port); to furnish a means of ingress to the manufactories of this country for the raw materials of Pan-Pacific lands, since 75 per cent of the raw materials imported into the United States come by way of the Pacific ports; and to assist the bay of San Francisco to its full development as a port.

The prospective total value of the foreign trade of the United States in the Pacific area for the calendar year of 1921 is more than two billions of dollars, equal to the total value of the foreign trade, exports and imports, of the United States with all countries, twenty years ago.

Hence the necessity which has stirred the city back of the Golden Gate to construct one of the largest and most modern ports in the world.

side to car or from car to ship. Paved roadways for motor trucks lead to all parts of each unit, running back to a wide paved "loop" on the mainland, into which come all five of the 80-foot hard-surfaced highways connecting the Berkeley water front with Oakland, Alameda, and all parts of the interior of California, Nevada and Arizona, as well as northward into Oregon and Washington. By means of ramps, motor trucks will be able to run directly from each quay on to the decks of deep-sea vessels to load or unload their cargoes.

The Federal Government, through General Lansing H. Beach, chief of engineers, has just instructed Colonel Herbert Deakne, United States district engineer for this district, to make further surveys, estimates and reports on the work which the Federal Government, through the War Department, will be called on to do in aid of this project. Such work will be mainly in the form of channels, and Colonel Deakne, who already has made one report on the feasibility of the project, is now engaged in making the second survey as to extent of work and costs. Permits for construction of the first unit have been issued by the War Department and the chief of the United States engineers.

When the city of Berkeley first decided to form a co-partnership with private interests for the construction of this great port, the Pacific Port Terminal was incorporated, and the work is proceeding under this corporation. The city will have control of the terminal and will have a share in the profits from the port facilities. It is expected that two units will be required almost immediately, so that construction of the second unit is planned to proceed when the first is about half completed, in order that construction may not be delayed. The third and fourth units will be constructed as needed.

With the incorporation of the city and the private interests for this work, B. F. Cresson, Jr., chief engineer of the New York-New Jersey Harbor Development Commission, and Charles W. Stanford, formerly chief engineer of the Department of Docks and Ferries of the City of New York, were employed as consulting engineers to make a survey, draw plans and furnish reports on the proposed port terminal. After an exhaustive study of the water front, these engineers decided in favor of the solid quay type of unit.

Messrs. Cresson and Stanford, the engineers who prepared the plans and who have been retained as consulting engineers throughout construction of the terminal, give this concise description of the new port:

"This marine terminal development will include sufficient wharfage for short-term storage for the assembling of cargo in advance of the ship and for holding cargo from the ship until it may be dispatched. It will include rail connections directly alongside the ship, where commodities may be transferred directly from cars to ships, or the reverse, and will include suitable machinery for such transfers. Directly connected with the transit sheds will be warehousing facilities for the long-term storage of commodities, including cold storage which may be arriving by ship, and which could be put immediately and directly into cold storage if that were considered advisable from the point of view of market conditions. These warehouses not only will be connected directly with the sheds alongside the berthing places for ships, but also will have highways of access for motor trucks, and convenient rail connections directly alongside. Thus is provided wharfage for ships, railroads adjacent to the ships, transit storage sheds and long-term storage sheds with rail and motor-truck access to each. These are the essentials of commercial marine development."